(2) Claims 11-12 under 35 U.S.C. §103(a) over Escher in view of Kämpf as applied above and further in view of U.S. Patent No. 5,465,169 (Eguchi); and

(3) Claim 17 under 35 U.S.C. §103(a) over Escher in view of Kämpf.

Applicants hereafter will respond to the Examiner's comments in numbered paragraph 2-8 as appearing in the "Response to Arguments" set forth at pages 2-4 of the outstanding official action.

The Examiner asserts in paragraph 2, at page 2 of the office action that —

> "Applicant argues that Escher does not teach that poly (3,4-dioxyalkylene thiophene) exhibits liquid crystal orienting properties since Escher merely claims that poly(3,4-dioxyalkylene thiophene) exhibits liquid crystal orienting properties but does not provide enabling experimental support.
>
> Applicant is respectfully apprised that the teaching by Escher that the poly (3,4-dioxyalkylene thiophene) has good orienting properties is sufficient in terms of suggesting to one of ordinary skill in the art to use it as an orienting layer. Since the polymer layer is mechanically rubbed to form an orienting layer

(gently stroked twice in the same direction) ('538, column 5, lines 20-55) it is the examiner's position that the disclosure is enabling. Applicant is respectfully requested to demonstrate how and why the experimental support is not enabling."

The statements imputed to the applicants have not been made by the applicants. Applicants stated at page 4, lines 16-19, of the Amendment filed March 22, 2004 that –

"The primary reference Escher does not disclose polythiophenes according to applicants' claimed formula (I) in which R^1 and R^2 together form an O-[C_1-C_4 alkylene]-O group or an O-[cycloalkylene]-O group."

Moreover, the applicants for Escher upon filing Escher had the option to claim identical substituents for R^1 and R^2 in formula (I) as for R^3 and R^4 in formula (II). The fact that the applicants did not do so can be inferred to mean from the lack of teaching that they had reason to believe that polymers outside the scope of formula (I), but within the scope of formula (II), either did not function as orienting layers in liquid crystal displays or were unknown. Applicants therefore submit that the fact that the applicants in Escher explicitly opted for narrower definitions for R^1 and R^2 than for R^3 and R^4 teaches away

from one skilled in the art regarding formula (II) as an alternate to formula (I) in the invention of Escher and, thus, that in the disclosure of formula (I) of Escher the options for R^1 and R^2 in formula (II) of Escher cannot have a greater scope than those for formula (I) of Escher.

Applicants further submitted at page 6, lines 14-16, of the Amendment filed March 22, 2004 that –

> "Furthermore, Escher provides no suggestion or indication that polythiophenes, other than those disclosed [in formula (I)] could also exhibit similar properties."

Applicants thus respectfully traverse the assertions of the Examiner in paragraph 2 of the official action.

The Examiner asserts in paragraph 3, at pages 2-3 of the office action that –

> "Applicant argues that since no reference is made to DE-A 3,717,668, DE-A 3,628,895, DE-A 3,736,114 or to any corresponding applications thereof in the disclosure of formula (I) of Escher et al., the options for R^1 and R^2 in the formula (II) of Escher et al. cannot have a greater scope than those for formula (I) and hence any implied allusion to a previous description of R^1 and R^2 in DE-A 3,717,668, DE-A 3,628,895, DE-A 3,736,114 or to any corresponding applications thereof must be

limited to the options for R^1 and R^2 in formula (I). Applicant is respectively apprised that the mere disclosure of the electrically conducting polymers of formula (II) right after formula (I) is indicative that formula (II) may be used as an alternate in place of preferred formula (I). Escher et al. does not teach against the use of the electrically conducting polymers of formula (II)."

Applicants submit, however, that the applicants in Escher upon filing Escher had the option to claim identical substituents for R^1 and R^2 in formula (I) as for R^3 and R^4 in formula (II). The fact that they did not do so can be inferred to mean from the lack of teaching that they had reason to believe that polymers outside the scope of formula (I), but within the scope of formula (II), either did not function as orienting layers in liquid crystal displays or were unknown. Applicants, respectfully submit therefor that the fact that the applicants in Escher explicitly opted for narrower definitions for R^1 and R^2 than for R^3 and R^4 teaches away from one skilled in the art regarding formula (II) as an alternate to formula (I) in the invention of Escher and hence that in the disclosure of formula (I) of Escher the options for R^1 and R^2 in the formula (II) of Escher cannot have a greater scope than those for formula (I) of Escher.

Applicants respectfully traverse the assertions of the Examiner in paragraph 3.

The Examiner asserts in paragraph 4, at page 3 of the office action that —

> " Applicant argues that none of the references of DE-A 3,717,668, DE-A 3,628,895, DE-A 3,736,114 were incorporated by reference into Escher. Applicant is respectfully reminded that the incorporation of these references into the summary (not the background) of the invention of Escher is motivation enough for one of ordinary skill in the art to look them up."

Applicants do not refute the fact that one skilled in the art would look up these references. However, applicants do dispute what is in the teaching that one skilled in the art would seek from these references. The fact that the applicants in Escher upon filing Escher had the option to claim identical substituents for R^1 and R^2 in formula (I) as for R^3 and R^4 in formula (II) but failed to do so, can be inferred to mean in view of the lack of teaching that they had reason to believe that polymers outside the scope of formula (I), but within the scope of formula (II), either did not function as orienting layers in liquid crystal displays or were unknown. Applicants therefore submit that the fact that the applicants in Escher explicitly opted for

narrower definitions for R^1 and R^2 than for R^3 and R^4 teaches away from one skilled in the art regarding formula (II) as an alternate to formula (I) in the invention of Escher and hence that in the disclosure of formula (I) of Escher, the options for R^1 and R^2 in the formula (II) of Escher cannot have a greater scope than those for formula (I). Applicants therefore submit that one skilled in the art would only look up these references to seek information about the preparation, stability and electrical conductivity (see column 2, lines 49-51) of the polymers according to formula (I). Applicants therefore respectfully traverse the Examiner's assertion of paragraph 4 of the office action.

The Examiner asserts in paragraph 5, at page 3 of the office action that –

> "Applicant argues that since formula (II) is within the teaching of formula (I), R^3 and R^4 in formula (II) must correspond to R^1 and R^2 in formula (I). Applicant is respectfully reminded that one of ordinary skill in the art would not base routine experimentation solely on the premise above. On the contrary, one of ordinary skill in the art would have been motivated to try the alternate formula (II) to determine what the alternate conductive properties and other physical parameters would be."

Applicants submit that the fact that the applicants for Escher explicitly opted for narrower definitions for R^1 and R^2 in Escher than for R^3 and R^4 teaches away from one skilled in the art regarding formula (II) as an alternate to formula (I) in the invention in Escher. Therefore, in the disclosure of formula (I) of Escher, the options for R^1 and R^2 in the formula (II) of Escher cannot have a greater scope than those for formula (I). Therefore, one skilled in the art would not have been motivated to explore the teaching of the polymers derived from a monomer of formula (II) outside the scope of formula (I). Applicants therefore traverse the assertion of the Examiner that one of ordinary skill in the art would have been motivated to try the alternate formula (II) to determine what the alternate conductive properties and other physical parameters would be.

The Examiner asserts in paragraph 6, at page 3 of the office action –

> "Applicant argues that an alkoxy group is an alkyl radical attached to the remainder of the molecule by oxygen and is not an alkylene radical attached to the remainder of the molecule by oxygen. Applicant is respectfully reminded that the supporting reference is Kämpf et al. in the rejection."

Applicants fail to understand the relevance of the supporting reference in that, as already stated, Escher teaches away from the present invention, since the applicants in Escher explicitly opted for narrower definitions for R^1 and R^2 than for R^3 and R^4. One skilled in the art would therefore not regard formula (II) as an alternate to formula (I) in the claimed invention of Escher. Therefore, in the disclosure of formula (I) of Escher, the options for R^1 and R^2 in the formula (II) of Escher cannot have a greater scope than those for formula (I). Applicants therefore submit that the assertion of the Examiner is irrelevant in that even were Kämpf to teach polymers derived from 3,4-dioxyalkylenethiophenes, this would be negated by the fact that Escher teaches away from using such polymers in the invention of Escher.

The Examiner asserts in paragraph 7, at page 4 of the office action that –

> "Applicant argues that Kämpf does not disclose the preparation of poly(3,4-dioxyalkylenethiophene)s and that while Kämpf purports to disclose solvent-soluble oligomers of poly(3,4-dioxyalkylenethiophene)s, later research show such to be insoluble and not swellable in solvent and solvent mixtures thus demonstrating that Kämpf is not enabled by experimental data. Applicant is

respectfully apprised that the teaching by Kämpf of the use of poly(3,4-dioxyalkylenethiophene)s as an electrically conducting (electroconductive) coating ('414, column 2, lines 25-70), and the inclusion of its parent DE-A 3,717,668 in Escher et al. (primary reference) as teaching alternate electrically conducting embodiments of poly(3,4-dioxyalkylenethiophene), provide sufficient motivation for one of ordinary skill in the art to have used the alternate embodiments of poly(3,4-dioxyalkylenethiophene) of taught by Kämpf as the electrically conductive poly(3,4-dioxyallcylenethiophene) in the orienting layer of Escher et al."

Applicants fail to understand the relevance of the supporting reference in that, as stated above, Escher teaches away from the present invention, since the applicants in Escher explicitly opted for narrower definitions for R^1 and R^2 than for R^3 and R^4. One skilled in the art would therefore not regard formula (II) as an alternate to formula (I) in the invention of Escher. Therefore, in the disclosure of formula (I) of Escher, the options for R^1 and R^2 in the formula (I) of Escher cannot have a greater scope than those for formula (I). Applicants therefore submit that the assertion of the Examiner fails to

take into consideration that Escher teaches away from the present invention. Applicants respectfully traverse the assertions of the Examiner in paragraph 7.

As to the Examiner's remarks in paragraph 8, at page 4 of the official action, the combination is deficient as discussed above.

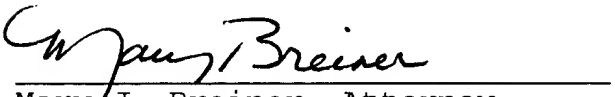
Accordingly, applicants respectfully submit that the applied references do not render the claimed invention obvious within the meaning of 35 U.S.C. §103(a). No motivation or desirability is taught or suggested that would lead one skilled in the art to modify the explicit teachings of the applied references in order to obtain the applicants' claimed invention. The mere fact that the prior art can be modified does not make the modification obvious unless the prior art suggests the desirability of the modification. Applicants respectfully submit that such suggestion is missing in the presently applied art. Withdrawal of the §103 rejections is respectfully requested.

Reconsideration and allowance of the claims are respectfully requested.

4907/USSN 09/689,632
Group Art Unit 1772

Respectfully submitted,

JEAN-PIERRE TAHON ET AL

By 

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